



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/924,204	08/07/2001	Karen Carpenter	END920010024US1	1139

5409 7590 08/26/2003

ARLEN L. OLSEN
SCHMEISER, OLSEN & WATTS
3 LEAR JET LANE
SUITE 201
LATHAM, NY 12110

EXAMINER

CHANG, RICK KILTAE

ART UNIT	PAPER NUMBER
----------	--------------

3729

DATE MAILED: 08/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/924,204

Applicant(s)

CARPENTER ET AL.

Examiner

Rick K. Chang

Art Unit

3729

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-65 is/are pending in the application.
- 4a) Of the above claim(s) not cited in item 6) below is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 28-31, 33, 35-44, 49, 51-54, 56 and 58-64 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group II and Species VII in Paper No. 4 is acknowledged. The traversals are not found persuasive because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper. Applicant's traverse of the requirement for election of species is noted, asserting that there is no serious burden on the examiner to examine all claims. The traverse has been carefully considered, but is not persuasive because the reasons proffered do not appear germane to the propriety of a requirement for election of species. The sections of the manual cited relate to restriction, not a requirement for election of species, which is clearly covered in section 808.01(a). Once the claims are determined to be directed to mutually patentable inventions and the Office requires an election of species, a persuasive traverse is an admission on the record that applicant does not find the claimed species are patentable, one over the other. Having not done so, the reasons presented are not persuasive. Applicant is not entitled to examination of multiple independent inventions in one application. Moreover, examination of the independent inventions herein would clearly present a burden because the searches will not be coextensive. Accordingly, the requirement is repeated and made final. Non-elected Species will be combined if applicant will stipulate that they are obvious over each other.

Applicants erroneously included claims that are not drawn to the elected Species VII. Therefore, claims 32, 34, 45-48, 50, 55, 57 and 65 are withdrawn from further consideration.

The requirement is still deemed proper and is therefore made FINAL.

NOTE: Please provide reference numerals (either in parentheses next to the claimed limitation or in a table format with one column listing the claimed limitation and another column listing corresponding reference numerals in the remark section of the response to the Office Action) to all the claimed limitations as well as support in the disclosure for better clarity. Applicants are duly reminded that a full and proper response to this Office Action that includes any amendment to the claims and specification of the application as originally filed requires that the applicant point out the support for any amendment made to the disclosure, including the claims. See 37 CFR 1.111 and MPEP 2163.06.

Specification

2. The disclosure is objected to because of the following informalities: delete “, and associated method of formation,” in line 1 of Abstract.

Appropriate correction is required.

NOTE: Please provide reference numerals (either in parentheses next to the claimed limitation or in a table format with one column listing the claimed limitation and another column listing corresponding reference numerals in the remark section of the response to the Office Action) to all the claimed limitations as well as support in the disclosure for better clarity. Applicants are duly reminded that a full and proper response to this Office Action that includes any amendment to the claims and specification of the application as originally filed requires that the applicant point out the support for any amendment made to the disclosure, including the claims. See 37 CFR 1.111 and MPEP 2163.06.

Claim Rejections - 35 USC § 103

Art Unit: 3729

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 28-31, 33, 35-41, 51-54, 56, and 58-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over DiStefano et al (US 5,558,928) in view of Noddin et al (US 5,276,955).

DiStefano discloses testing the substructures for electrical integrity, a DM laminate 10b and a first multilevel conductive via (26b) which is a stacked via (due to different layers of dielectric and conductors), a deep via and a simple-deep via, N=2, 26c is a second multilevel conductive via, 22 is a first metal layer and 30 is a second metal layer, 26 begins at the outer surface and extends to a fraction of a total thickness and electrically coupling 26b, half way (1/2) of 26 is a fraction of full thickness, 30 is a first metal layer within an interior of 10a, 26 begins from one end and extends to the opposite end.

DiStefano fails to disclose that the substructure is a complex power-signal and the first metal layer is a complex power-signal.

Noddin discloses 14 and 16 are complex power-signal and they are connected a conductor via as shown in Fig. 6 to conductive structures mounted to 18.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify DiStefano by the substructure is a complex power-signal and the first metal layer is a complex power-signal, as taught by Noddin, for the purpose of providing complex power-signal to an electronic component mounted on the interposer.

NOTE: Please provide reference numerals (either in parentheses next to the claimed limitation or in a table format with one column listing the claimed limitation and another column listing corresponding reference numerals in the remark section of the response to the Office Action) to all the claimed limitations as well as support in the disclosure for better clarity. Applicants are duly reminded that a full and proper response to this Office Action that includes any amendment to the claims and specification of the application as originally filed requires that the applicant point out the support for any amendment made to the disclosure, including the claims. See 37 CFR 1.111 and MPEP 2163.06.

5. Claims 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over DiStefano et al (US 5,558,928) in view of Noddin et al (US 5,276,955).

DiStefano/Noddin teach the invention as described with respect to claims 28-31, 33, 35-41 and 64 above. DiStefano discloses a conductive through hole (Fig. 3 shows all the structures are stacked together to form a conductive through hole).

DiStefano/Noddin fail to disclose providing another DM laminate to the opposite side of the CPS substructure.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide another DM laminate, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. Further, it would have been obvious to one having ordinary skill in the art at the time the invention was made to position another DM laminate to the opposite side of the CPS substructure, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

NOTE: Please provide reference numerals (either in parentheses next to the claimed limitation or in a table format with one column listing the claimed limitation and another column listing corresponding reference numerals in the remark section of the response to the Office Action) to all the claimed limitations as well as support in the disclosure for better clarity. Applicants are duly reminded that a full and proper response to this Office Action that includes any amendment to the claims and specification of the application as originally filed requires that the applicant point out the support for any amendment made to the disclosure, including the claims. See 37 CFR 1.111 and MPEP 2163.06.

6. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over DiStefano et al (US 5,558,928) in view of Noddin et al (US 5,276,955), and further in view of Koontz et al (US 6,181,004).

DiStefano/Noddin teach the invention as described with respect to claims 28-31, 33, 35-44 and 64 above.

DiStefano/Noddin fail to disclose mounting a semiconductor chip.

Koontz discloses in Fig. 7 a semiconductor chip is mounted to an assembly.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify DiStefano/Noddin by mounting a semiconductor chip, as taught by Koontz, for the purpose of electrically communicating with the chip to process data or share information with other parts of the assembly.

Conclusion

7. Please provide reference numerals (either in parentheses next to the claimed limitation or in a table format with one column listing the claimed limitation and another

Art Unit: 3729

column listing corresponding reference numerals in the remark section of the response to the Office Action) to all the claimed limitations as well as support in the disclosure for better clarity. Applicants are duly reminded that a full and proper response to this Office Action that includes any amendment to the claims and specification of the application as originally filed requires that the applicant point out the support for any amendment made to the disclosure, including the claims. See 37 CFR 1.111 and MPEP 2163.06.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick K. Chang whose telephone number is (703) 308-4784. The examiner can normally be reached on 5:30 AM to 1:30 PM, Monday through Friday, except for maxi-flex day off (any one of working days).

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9302 for regular communications and (703) 872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1148.

A handwritten signature in dark ink, appearing to be 'Richard Chang', written over a horizontal line.

**RICHARD CHANG
PRIMARY EXAMINER**

RC
August 21, 2003